

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-4, 6, 8-11, 13-22, 24, and 25 are presented for examination. Claim 5, 7, 12, and 23 were previously canceled without prejudice or disclaimer. Claim 1 has been amended to remove preamble language forming the basis for an objection and rejection under the first paragraph of 35 USC §112 and to address various assertions as to improper antecedent basis in the outstanding Action.

The outstanding Office Action includes an objection to the specification and a corresponding rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the enablement requirement of the first paragraph of 35 U.S.C. §112, rejections of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the second paragraph of 35 U.S.C. §112, a rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the utility requirement of 35 U.S.C. §101, a rejection of Claims 1-4, 6-14, 16, and 18-23 under 35 U.S.C. §103(a) as being unpatentable over Moher (U.S. Patent No. 6,161,209) in view of Wei et al. (U.S. Patent No. 5,440,570, Wei).

The objection to the specification and a corresponding rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the enablement requirement of the first paragraph of 35 U.S.C. §112 is believed to be overcome as the preamble language of Claim 1 (as to the method being “of determining a decoded information quality parameter for a digital data transmission with error-correcting coding”) that formed the basis thereof has been removed from Claim 1 so that the preamble now recites “[a] method comprising steps of.”

Accordingly, withdrawal of this objection-rejection based upon the now deleted preamble language is believed to be in order.

The rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the second paragraph of 35 U.S.C. §112 asserting there was insufficient antecedent basis for reciting “the digital data” at lines 4, 5, and 6 and “the received digital data in line 9 is also believed to be overcome by the present amendment to Claim 1. In this respect, Claim 1 has been amended in light of the deletion of “digital data” from the preamble (that provided inherent and reasonable support for the questioned recitals of “the digital data” at lines 4, 5, and 6 of Claim 1) to now recite the step of “performing error-correcting coding of digital data to produce error-corrected digital data with error-correcting coding.”

Although the previous recitation of Claim 1, line 6 as to “receiving the digital data” clearly provided reasonable support (in MPEP §2173.05 terms) for reciting “the received digital data, Claim 1 has been further amended to now recite that there is a step of “receiving the error-corrected digital data with error-correcting coding to provide received error-corrected digital data with error-correcting coding” so that the antecedent basis for the later recital of “the received error-corrected digital data with error-correcting coding” is clear beyond any reasonable doubt.

It is noted that the present Amendment to Claim 1 clearly “removes issues from appeal” and should require only “a cursory review.” Accordingly, MPEP 714.13 (II) guidelines indicate that the present Amendment under 37 CFR §1.116 should be entered.

Turning to the separate rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 (starting at the bottom of page 4 of the outstanding Action) under the second paragraph of 35 U.S.C. §112 “as being incomplete for omitting essential structural cooperative relationships of elements, such omissions amounting to a gap between the necessary structural connections,” it is noted

that the statement is first of all misplaced because Claims 1-4, 6, 8-11, 13-22, 24, and 25 are **METHOD** claims reciting **STEPS**, not apparatus claims reciting “structural cooperative relationships of elements” that can be said to amount to “a gap between the necessary structural connections” as clearly referenced by MPEP §2172.01.

Secondly, page 5 of the outstanding Action truncates the above-noted concepts of omitted “structural cooperative relationships of elements” (that are disclosed to be essential so as to amount to a gap between the “necessary structural connections”) into a far more general and undefined category of “omitted structural cooperative relationships.” This far more general and undefined category of “omitted structural cooperative relationships” is not treated in MPEP §2172.01 or the case law discussed therein as being a proper basis to make any rejection, much less one under the second paragraph of 35 U.S.C. 112.

MPEP §2172.01 further states that “a claim which fails to interrelate **ESSENTIAL ELEMENTS OF THE INVENTION AS DEFINED BY APPLICANT(S) IN THE SPECIFICATION** may be rejected under 35 U.S.C. 112, second paragraph for failure to point out and distinctly claim the invention.” Clearly the PTO must follow its MPEP guidelines and must show how the use of any particular known turbo decoding process **HAS BEEN DISCLOSED IN THE SPECIFICATION OF THIS APPLICATION TO BE ESSENTIAL** before it can even begin on the path of making a rejection under the second paragraph of 35 U.S.C. 112 that is based upon the steps of this turbo decoding process being “essential elements.”

As it is clear that: (1) **THE SPECIFICATION DOES NOT INDICATE THAT ANY PARTICULAR KNOWN TURBO DECODING PROCESS IS ESSENTIAL**, much

less that particular steps of some particular known turbo decoding process are essential; (2) these rejected claims recite **STEPS** of a method, not apparatus limitations involving “structural cooperative relationships of elements;” and (3) “omitted structural cooperative relationships” is not a reason recognized by MPEP §2172.01, or the case law discussed therein, for making a rejection under the second paragraph of 35 U.S.C. §112; it is also clear that the rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 (starting at the bottom of page 4 of the outstanding Action) is not an authorized rejection under MPEP §2172.01 and is traversed for this reason.

In addition, this rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 (starting at the bottom of page 4 of the outstanding Action) is traversed as equating the **BREADTH** of the recited step of “decoding the received error-corrected digital data with error-correcting coding using a turbo decoding process to determine a decoded characteristic statistical quantity from a set of weighted output information” to indefiniteness. This approach violates precedent, however. See In re Miller, 169 USPQ 597, 600 (CCPA 1971), noting that “breadth is not to be equated with indefiniteness.”

Besides incorrectly asserting the omission of structural cooperative relationships as being a reason to find indefiniteness as to Claims 1-4, 6, 8-11, 13-22, 24, and 25, the bottom of page 5 of the outstanding Action also asserts that the “relationship between ‘turbo decoding’ and ‘a decoded information quality parameter’ is unclear” because “it is not clear what ‘a decoded information quality parameter’ has to do with turbo decoding and whether it is used as part of the turbo decoding process or is a by-product of the process.” This part of the outstanding Action then asserts that because “none of the claim language recites any

decoding steps and only states that turbo decoding is used in the step of determining “a coded characteristic statistical quantity,” it is not clear what tangible relationship the ‘turbo decoding [sic, quotation mark omitted] has with ‘a decoded information quality parameter’ and how it is used.”

Both of these assertions clearly misinterpret separate steps of Claim 1. In this respect, one step of Claim 1 recites “decoding the received error-corrected digital data with error-correcting coding using a turbo decoding process to determine a decoded characteristic statistical quantity from a set of weighted output information.” This recited “decoding” step has nothing to do with any relationship between the “turbo decoding process and “a decoded information quality parameter” because no “decoded information quality parameter” is mentioned therein. While the “decoded characteristic statistical quantity” determined in this “decoding” step through use of the recited “turbo decoding process” is then used in a separate Claim 1 step that recites “determining a decoded information quality parameter from the determined decoded characteristic statistical quantity and at least one configuration parameter” (emphasis added), the determination of the “decoded information quality parameter” is clearly not recited to be done using the previously recited “turbo decoding process.”

Thus, the relation between the Claim 1 “turbo decoding process” and the use thereof to determine “a decoded characteristic statistical quantity from a set of weighted output information” that is then used to determine the “decoded information quality parameter from the determined decoded characteristic statistical quantity and at least one configuration parameter” (emphasis added) could not be clearer. It is also clear that these separate determinations do not require any knowledge of the specific steps of the “turbo decoding

process” being used. Also, it is clear that the “decoded information quality parameter” is not used as part of the “turbo decoding process” as this “turbo decoding process” has to be used to determine the “decoded characteristic statistical quantity from a set of weighted output information” that is then used along with at least one configuration parameter to determine the “decoded information quality parameter.”

The questioned relationship between the “turbo decoding process” and the “at least one configuration parameter” (in the paragraph bridging pages 5 and 6) is likewise without merit as a careful reading of the above-noted steps of Claim 1 reveals no recitation hinting that the “turbo decoding process” and the “at least one configuration parameter” have any relationship, much less a relationship somehow dependent on the particular steps of the recited “turbo decoding process.”

Furthermore, while the “turbo decoding process” and the “set of weighted output information,” noted at the middle of page 6 of the outstanding Action, at least have a relationship in terms of the Claim 1 recital of “decoding the received error-corrected digital data with error-correcting coding using a turbo decoding process to determine a decoded characteristic statistical quantity from a set of weighted output information,” it is clear that this relationship does not depend on the particular steps of the “turbo decoding process.”

The questioned relationship between the “turbo decoding process” and the “a weighting factor” at the bottom of page 6 of the outstanding Action is likewise without merit as a careful reading of Claim 1 reveals no recitation hinting that the “turbo decoding process” and the “a weighing factor” have any relationship, much less a relationship somehow dependent on the particular steps of the recited “turbo decoding process.” In this respect, the

“weighing factor” is only determined when the “decoded information quality parameter” is a numerical scalar and Claim 1 recites that this “weighing factor” is determined by using this numerical scalar version of the “decoded information quality parameter.”

Finally, the top of page 7 of the outstanding Action states that Claim 1 omits a relationship between “a numerical scalar or an integer number” and “a probable number of errors.” The quoted language here has been taken out of actual context to suggest an omission while the language considered in context actually explains the relationship by stating that “the determined decoded information quality parameter is a numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items” (emphasis added).

Once again, the PTO incorrectly confuses broad claim language that will read on any known “turbo decoding process” and indefinite claim language that has no discernible scope of coverage and so once again ignores the admonition of the above-noted Miller decision that breadth of claim language is not to be equated to indefiniteness. As further noted in Miller (at 169 USPQ 599) “[t]he first sentence of the second paragraph of 35 U.S.C. 112 requires only that claims ‘set out and circumscribe a particular area with a reasonable degree of precision and particularity’” and that has been done here.

Moreover, the outstanding Action fails to properly consider the disclosure of page 13, line 25, to page 17, line 33, of the specification, for example, as to the well known nature of “turbo decoding processes” using elementary decoding steps with iteration. Clearly these known relationships are not ones that need to be set forth in great detail in either the specification or claims.

Finally, if the claims were truly indefinite in terms of lacking the required definition of the metes and bounds of the claimed invention with a reasonable degree of precision and particularly, how then can they be reasonably interpreted to be obvious over prior art teachings as the meaning to give to truly indefinite claim language is, by definition, impossible to determine.

In light of the foregoing, the rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the second paragraph of §112 and the related assertions of omitted relationships is respectfully traversed.

The rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the utility requirement of 35 U.S.C. §101 is respectfully traversed as it is improperly founded on the misstatement that “the steps have no tangible connection to turbo decoding” and the clearly erroneous attempt to create a requirement for the claims to recite a specific utility.

Turning to the above-noted “no tangible connection” misstatement, it is noted that base independent Claim 1 specifically recites the above-noted step of “decoding the received error-corrected digital data with error-correcting coding using a turbo decoding process to determine a decoded characteristic statistical quantity from a set of weighted output information” (emphasis added). This step requiring the use of the recited “turbo decoding process” is clearly a “tangible connection to turbo decoding.”

As to the claims providing “any useful operation,” the claims do not have to recite some specific utility as this can be included in the specification or can be based upon the utility being well established in the art. See MPEP §2107.02(II).

This rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under the utility requirement

of 35 U.S.C. §101 further violates MPEP §2107(C) guidelines as to treating “as true a statement of fact made by an applicant in relation to an asserted utility unless countervailing evidence can be provided that shows that one of ordinary skill in the art would have a legitimate basis to doubt the credibility of such a statement.” Thus the PTO, by its own guidelines, is required to provide **EVIDENCE** (not unsupported conclusions) that the asserted utility at page 9, lines 24-25 of the specification is not credible. Further note MPEP §2107.02 (1) and the fact that “regardless of the category of invention that is claimed (e.g., product or process), an applicant need only make one credible assertion of specific utility for the claimed invention to satisfy 35 U.S.C. §101 and 35 U.S.C. 112.”

MPEP §2107(C) guidelines further establish the need for any valid rejection for lack of utility to be accompanied by “a detailed explanation why the claimed invention has no specific and substantial credible utility.” Nothing is said here, in the statute, or in the relevant case law that supports the apparent position in the outstanding Action that a lack of utility rejection can be properly made because the claims do not recite any use as urged in paragraph 6 on page 7 of the outstanding Action (urging that “the claims do not provide any useful operation” and emphasizing that “[t]he claims as written . . . have no useful connection to any tangible useful process, machine, manufacture, or composition of matter” (emphasis added)). Moreover, even these assertions are contradicted by the later admission by the PTO at page 10 of the outstanding Action as to the statement that “Moher does not explicitly teach the specific use a value representing a number of errors” as to the subject matter of Claim 1.

Accordingly, the rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under 35 U.S.C. §101 is also respectfully traversed.

With regard to the rejection of Claims 1-4, 6, 8-11, 13-22, 24, and 25 under 35 U.S.C. §103(a) as being unpatentable over Moher in view of Wei, it is noted that these rejected claims all clearly require the base independent Claim 1 “determined decoded information quality parameter” to be “a numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items, and when the determined decoded information quality parameter is the numerical scalar, using the numerical scalar to determine a weighting factor.” This is clearly not subject matter taught by Moher as partially admitted at the bottom of page 10 of the outstanding Action as to the statement that “Moher does not explicitly teach the specific use a value representing a number of errors” relative to the further assertion at lines 17-18 that $\Lambda_2(x)$ in FIG. 21 of Moher can be read as “a decoded information quality parameter.”

Not only is there no explicit teaching that $\Lambda_2(x)$ of FIG. 21 should be “a numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items,” such a “a numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items,” it is not implicitly suggested either. This is because $\Lambda_2(x)$ of FIG. 21 is disclosed to be a “refined estimate of the systematic bits” that is expressed as a “log-likelihood, $\Lambda_2(x(j))$.” This “log-likelihood” is disclosed to be subject to processing by a “De-interleaver” to be fed back to the first “BCJR Decoder” or to be passed to another “De-Interleaver” to be processed to provide decoded bits. See relied upon Fig. 21 and note col. 17, lines 31-40 of Moher. The reason why the artisan would even consider converting $\Lambda_2(x)$ to be the claimed “numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information

items” is not present in the teachings of Moher and not explained in the outstanding Action.

Apparently realizing this further lack of any reasonable teaching in Moher, the outstanding Action turns to Wei (at the top of page 11) and suggests that the teachings of cols. 7 and 8 as to “ $\det(L_p^{(0)})$ ” would somehow serve to motivate the artisan to somehow convert $\Lambda_2(x)$ of FIG. 21 of Moher so that it would read as the claimed “numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items.” Once again, the explanation as to how the artisan would accomplish this is conspicuous by its absence.

Moreover, whatever else can be said of the Wei disclosure as to the values of “ $\det(L_p^{(0)})$ ” at cols. 7 and 8, it is first clear that these individual values are not themselves disclosed to be “a numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items.” See col. 7, lines 33-41 and note that “the number of errors in a t-correcting bp BCH code can be determined in terms of the determinants of the matrices $L_1^{(0)}$, $L_2^{(0)}$, . . . , and $L_t^{(0)}$ i.e. $\det(L_1^{(0)})$, $\det(L_2^{(0)})$, . . . , and $\det(L_t^{(0)})$,” where these number of errors in a t-correcting bp BCH code are then determined by determining whether or not the value of these determinants of the matrices “are zero or not.” This raises the question of how the PTO can reasonably equate these determinants of the matrices that are zero or some seemingly arbitrary value to be the claimed “numerical scalar or an integer number representing a probable number of errors existing in a set of decoded information items.”

Moreover, as the teaching as to determining the numbers of errors is clearly specific to the Wei taught t-correcting bp BCH code, the manner that the artisan would proceed to adopt

these t-correcting bp BCH code teachings to the BCJR algorithm decoder Moher is not self evident and also is not explained in the outstanding Action.

This lack of explanation and the other above-noted explanation deficiencies are contrary to established case law. See In re Lee, 61 USPQ2d 1430, 1432 (Fed. Cir. 2002) (“... the agency tribunal must present a full and reasoned explanation of its decision.”) and at 61 USPQ2d 1433 as follows:

The Administrative Procedure Act, which governs the proceedings of administrative agencies and related judicial review, establishes a scheme of “reasoned decision making.” Not only must an agency's decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational. [citation omitted]. This standard requires that the agency not only have reached a sound decision, but have articulated the reasons for that decision.

Not only does the outstanding Action not articulate any reasoning as to how the artisan would go about modifying the FIG. 21 BCJR algorithm based decoder of Moher, it fails to explain why the artisan would even look to the t-correcting bp BCH code Wei reference for teachings pertinent to modifying Moher. As noted in Lee, id., “[w]hen patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness [emphasis added].”

In addition to the obviousness rationale offered in the outstanding Action failing to satisfy the above-noted explanation requirements of Lee, the reasoning offered appears to assume it is permissible to submit a subjective conclusion as to what those of ordinary skill

would have recognized as to “a value [misstatement of the Wei teachings of information conveyed by the determinants of the matrices suggested] representing a number of errors would have provided the opportunity to determine the number of errors left in a data string” to demonstrate what would have led the artisan to modify Moher by the teachings of Wei.

However, Lee (at 69 USPQ2d 1434) further notes it to be error to substitute such subjective conclusions for actual evidence of the reasons why the artisan would have been led to modify

FIG. 21 of Moher by the col. 7-col.8 teachings of Wei as follows:

The examiner's conclusory statements . . . ”do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to “[use] that which the inventor taught against its teacher” (citation omitted).

Although the above comments traversing the 35 U.S.C. §103 rejection are primarily directed to Claim 1, they are equally applicable to Claims 2-4, 6, 8-11, 13-22, 24, and 25 because each of these claims all ultimately depends from Claim 1 and, thus, includes all the subject matter of this base independent claim. In addition, each of these dependent Claims 2-4, 6, 8-11, 13-22, 24, and 25 add further features to the subject matter of independent base Claim 1, which further features are also not reasonably taught or suggested by Moher and/or Wei considered alone or together in any proper combination.

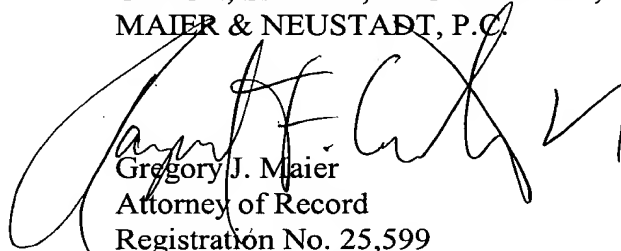
Accordingly the rejection of Claims 1-4, 6-14, 16, and 18-23 under 35 U.S.C. §103(a) as being unpatentable over Moher in view of Wei is traversed for all the above-noted reasons.

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As no other issues are believed to remain outstanding relative to this application, it is believed to be clear that this application is in condition for formal allowance and an early and favorable action to this effect is, therefore, respectfully requested.

Respectfully submitted,

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